Fiscal Year 2005 President´s Budget Request for NIMH

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH

Witness appearing before the Senate Subcommittee on Labor-HHS-Education Appropriations

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Mr. Chairman, and members of the Committee,

I am pleased to present the President's budget request for the National Institute of Mental Health (NIMH) for FY 2005, a sum of $1,421 million, which reflects an increase of $39 million over the comparable FY 2004 appropriation.

In my statement, I will call to your attention the immense burden on our Nation of mental and behavioral disorders. In addition, in the context of a brief review of our research activities and accomplishments, I will describe some of our efforts, in collaboration with trans-NIH initiatives, to bring new treatments from the laboratory to the clinical research arena and ultimately to widespread practice in the community.

BURDEN OF MENTAL ILLNESS

The National Institute of Mental Health faces an enormous challenge: to reduce the burden of mental and behavioral disorders through research on mind, brain, and behavior. Mental disorders are real illnesses that can be diagnosed and in many cases, treated effectively. The need is vast: 450 million people worldwide suffer from a mental disorder. Mental illnesses account for four of the top six causes of disability among 15-44 year olds in the Western world. By 2020, psychiatric and neurological conditions will have likely increased their share of the total global burden by almost half, from 10.5% to 15%.

In addition to morbidity, mental illnesses are a substantial source of mortality. Of the 30,000 Americans who die by suicide each year, 90 percent have a mental illness. Deaths from suicide outnumber deaths from homicide (18,000) as well as deaths from AIDS and most forms of cancer. Suicide is high among several ethnic minority groups, though remains highest in older white males. Between 1952 and 1992, the incidence of suicide among adolescents and young adults nearly tripled; currently it is the third leading cause of death in adolescents.

In addition to the emotional costs, the economic costs of mental illness are staggering. According to the recent report from the President's New Freedom Commission on Mental Health, the cost in the US from both direct (treatment-related) and indirect (productivity loss) expenses may exceed $150 billion per year with rapid annual increases, especially in the drug treatment area. Adding to that, more than three million people are receiving disability benefits due to mental disorders. They constitute nearly 28% of disabled workers in the Social Security Disability Insurance Program, and more than 35% of people with disabilities receiving Supplemental Security Income. Together they accounted for an estimated $25 billion dollars in cash benefits in 2001.

SCIENCE TO SERVICE

For many mental disorders, there is some form of treatment, but there is no cure. The report from the President's New Freedom Commission on Mental Health describes the need for transforming the delivery of evidence-based treatment and services to communities where they can directly benefit people with mental illness. To achieve this goal, NIMH recognizes the need for the research enterprise to partner with other organizations such as the Substance Abuse and Mental Health Services Administration (SAMHSA), state governments, and advocacy groups. In one such example, NIMH and SAMHSA recently funded nine one-year grants to state mental health agencies to support planning activities toward the implementation of evidence-based practices. Proposed science to service research activities include devising evidence-based group-focused activities for specific ages (child, adult); managing medication for those with schizophrenia; and providing cognitive behavioral therapy for people with depression. Each grant is expected to result in future research and service development initiatives. Translating scientific breakthroughs into far-ranging clinical care, we believe, is an urgent and achievable task.

PROGRESS IN GENETICS

In addition to applying what we already know, we must continue the scientific efforts required to develop better treatments to bring us closer to our ultimate goals of curing or preventing severe mental health disorders. To attain these ambitious goals, we will need a much larger variety of medications and behavioral therapies than are currently available – treatments that can be tailored to work for all those who need them, not just a small subset. As an initial first step, we must discover how genes and the environment interact to produce the biological variations that can signal vulnerability to disease. This year has been remarkable in its wealth of discoveries of genes as well as gene-environment interactions. In depression, for example, NIH- sponsored researchers found that a variation in the gene that regulates serotonin transmission can make a person more vulnerable to depression when faced with stressful life experiences. Those without the gene variation had no such vulnerability, and appeared to be resilient even in the face of many life stresses. Those with the gene variation were not depressed until and unless they faced major life stressors. This suggests that some of the environmental contributors to illness may only be detected by first identifying variations in genetic risk. Future research could help us apply this information to identify those most at risk, and develop treatments that either target genes or the environment, or both. It also suggests a new model with which to test genetic vulnerability and environmental stresses in other major diseases, such as schizophrenia, anxiety disorders, or eating disorders.

This year we have also seen exceptional progress in research on schizophrenia. Several genes have been found which appear to significantly contribute to the development of schizophrenia, providing at least a partial blueprint for the genetic risk architecture of the disease. While we still need to learn more about how they work, this group of genes should bring us closer to diagnostic tests for early detection, new targets for treatment, and even new strategies for prevention. In other studies, genes have been found which are thought to play a role in obsessive-compulsive disorder, panic disorder, and autism. NIMH researchers have also identified genes involved in memory and information processing, both of which are impaired in schizophrenia and various other disorders. These studies were among those named collectively as the number two scientific 'breakthrough of the year" by the prestigious journal Science in December. Most of the studies listed were conducted by intramural or NIMH-funded investigators. Studies this year have also provided new insight into the neural circuitry of anxiety and fear processing, suggesting new targets for drug development to treat anxiety, post-traumatic stress disorder, and various phobia disorders.

SCHIZOPHRENIA TREATMENT INITIATIVE

While the news on schizophrenia has been exciting, we recognize that the road from gene discovery to prevention and treatment is neither simple nor rapid. To accelerate this process, we created a new initiative on schizophrenia research. A primary component is a new intramural interdisciplinary team, ranging from molecular to clinical scientists, who will lead a broad effort to understand how different gene variations alter neural networks and disrupt brain activity, leading to cognitive impairment and psychosis. The team will work to identify the role of these vulnerability genes, including their individual contributions to risk, severity of the disease, and drug response.

A second component of the initiative is a program that targets cognitive problems for people with schizophrenia. Cognitive deficits, such as trouble with memory, attention, and executive function (capacity to make judgments and control impulses) are major determinants and predictors of long-term disability in schizophrenia. They remain a significant barrier to a productive life for people with the disease, yet the medications currently available provide no relief for cognitive problems. There has been a lack of scientific consensus on which cognitive impairments should be targeted and which tools are best for measuring them. As a result, the FDA has not been able to recognize cognition in schizophrenia as a valid treatment endpoint for drug registration. To address these issues, NIMH launched the Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS) program. It brings together representatives from academia, industry, and regulatory agencies to develop a comprehensive assessment tool to measure cognitive functioning in people with schizophrenia. The second phase is to develop and test novel compounds designed to enhance cognition.

ROADMAP

For most of our recent genetic discoveries, we lack the molecular tools needed to link the genes to new treatments. The search for new molecular tools for schizophrenia and other mental disorders will be aided greatly by one of the NIH Roadmap initiatives that will establish a repository of diverse organic chemicals. Organic chemicals,
commonly referred to as “small molecules,” have proven to be extremely important to researchers exploring the functions of the cell at the molecular level. In fact, most medicines, from aspirin to antihistamines, are small molecule compounds. This new “molecular library” will offer researchers access to hundreds of thousands of small organic molecules that can be used as chemical probes to study cellular pathways. These compounds will help validate new targets for drug therapy more rapidly, and will enable other researchers to move them into the drug-development pipeline.

AUTISM

NIMH plays a major role in a broad-based NIH effort to create a network of autism research centers focusing on the biomedical and behavioral aspects of the disease. Five institutes at NIH are coordinating their research efforts in an initiative called the Studies to Advance Autism Research and Treatment (STAART) Centers program. This year, the institutes awarded grants to support six new autism research centers, in addition to the two that were funded last year. NIH expects to spend $65 million over five years for the eight centers.

NIMH is the lead agency for the Interagency Autism Coordinating Committee (IACC), a group charged with coordinating research and other efforts on autism within the Department of Health and Human Services (HHS). NIMH took the lead in organizing the “Autism Summit Conference: Developing a National Agenda,” a joint effort of the HHS and the Department of Education, held in

November 2003. About 650 people attended the meeting to address three major areas of emphasis: biomedical research, implementing early screening and diagnosis, and improving the accessibility and coordination of services. A key focus of the meeting was the introduction of a 10-year national research agenda, developed by an IACC-appointed expert panel. The research agenda identified roadblocks hindering progress in understanding autism's causes and developing treatment, and provided goals and strategies for the next 10 years to overcome these challenges. These research efforts will be carried out through the centers of excellence within the STAART network.

PRACTICAL CLINICAL TRIALS

To improve human health, scientific discoveries must be translated into practical applications. Such discoveries typically begin at "the bench" with basic research - where scientists study the mechanisms and pathogenesis of a disease at a molecular or cellular level —then progress to the clinical level, or the patient's "bedside." Equally important is the translation from bedside to practice. Moving new drugs and therapies more quickly and smoothly out of the research environment and into the hands of clinicians is a key feature of the NIH Roadmap. To achieve this, NIH will promote the creation of better integrated networks of academic centers that work jointly on clinical trials and which include community-based physicians who care for large groups of patients. Implementing this vision will require new ways of organizing the methods in which clinical research information is recorded, defining new standards for clinical research protocols, and creating new models of cooperation between NIH and patient advocacy alliances.

For its part, NIMH is finishing up four large-scale, longitudinal research studies to compare therapeutic approaches for serious mental illnesses, including schizophrenia, Alzheimer's disease, major depression, and bipolar disorder. These are different than most clinical trials, which are usually of short duration and limited to assessment of clinical symptoms. The NIMH studies are testing the various treatment options currently available for these disorders in diverse community populations, recruiting people from a variety of "real world" practice settings, and expanding outcome measures to include functional status and economic costs. The clinical populations currently enrolled in these NIMH treatment trials are among the largest and best characterized populations with bipolar disorder, schizophrenia, and depression ever studied through clinical trials in mental health. These trials will answer urgent questions about the treatment of adolescents with depression, the use of atypical anti-psychotics in people with schizophrenia and Alzheimer's, and the optimal long-term medication for bipolar patients. When the studies are over within the next two years, we hope to be able to continue utilizing this valuable clinical infrastructure — made up of staff, investigators, federal and state agencies, industry, patients, and patient advocacy groups — to answer other critical public health questions in diverse populations.

PRIORITY-SETTING

Over the past five years, we have witnessed unparalleled advances in the basic sciences relevant to mental health. Genomics, imaging, and many areas of neurobiology are beginning to reveal a new understanding of normal and abnormal behavior. Against this backdrop of scientific progress, we continue to face extraordinary challenges for our patients with mental disorders. Science now yields opportunities that promise to deliver for each of these challenges. To realize this promise, we must define areas of high priority. To assist us, workgroups of our National Advisory Mental Health Council are reviewing the NIMH portfolio initially in two key research areas: clinical trials and basic science. Both workgroups plan to deliver reports by May 2004 and both will define priority areas using the criteria of relevance, traction, and innovation. Both workgroups have done an impressive job in reviewing the hundreds of relevant grants in the portfolio. We look forward to their recommendations, as well as to those of our Outreach Partners in every state, the mental health advocacy community,

and the public. We rely on these groups to help us meet our ultimate goal of relieving the profound misery suffered daily by patients and families affected by mental disorders.

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